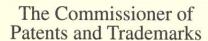
The United States of America



Has received an application for a patent for a new and useful invention. The title and description of the invention are enclosed. The requirements of law have been complied with, and it has been determined that a patent on the invention shall be granted under the law.

Therefore, this

United States Patent

Grants to the person(s) having title to this patent the right to exclude others from making, using, offering for sale, or selling the invention throughout the United States of America or importing the invention into the United States of America for the term set forth below, subject to the payment of maintenance fees as provided by law.

If this application was filed prior to June 8, 1995, the term of this patent is the longer of seventeen years from the date of grant of this patent or twenty years from the earliest effective U.S. filing date of the application, subject to any statutory extension.

If this application was filed on or after June 8, 1995, the term of this patent is twenty years from the U.S. filing date, subject to any statutory extension. If the application contains a specific reference to an earlier filed application or applications under 35 U.S.C. 120, 121 or 365(c), the term of the patent is twenty years from the date on which the earliest application was filed, subject to any statutory extension.

Buce lehren
Commissioner of Patents and Trademarks
Pandra Morta

Attest



United States Patent [19]

Lin

[11] Patent Number:

5,649,778

Date of Patent:

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[54] MULTI-DIRECTIONAL HYDRAULIC SWIVEL JOINT

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[22]	Filed: May 28, 1996	
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[52]	U.S. Cl 403/31; 403/57; 403/	
	464/27; 464/1	
[58]	Field of Search	
	403/15; 464/27, 136, 24, 106, 1	112

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Primary Examiner-Harry C. Kim

[57]

ABSTRACT

A multi-dirctional swivel joint for carrying loading members comprises a crosswise main body having a pair of first and a pair of second hollow cylinder members perpendicular to one another each having connected with a stepped neck member at their free end and pivotally and intersectionally coupled with a pair of lug members so as to permit the main body swiveling alternatively therewithin in multi-directions. A piston member slidingly disposed into each of the hollow cylinder members for defining a pair of first and second cylinder chambers which respectively communicate with an ambient hydraulic compressor via a pair of the first and second conduits through the piston member therein, in addition to a retaining ring sleeved on the free end of the piston member and secured by nut. So that the coupling of the main body with the lug members can be tightened or released upon the alternative exertion of the hydraulic force from the ambient compressor.

6 Claims, 4 Drawing Sheets

